

Serial No.: 10/519,856

PU020329

Customer No.: 24498

April 30, 2007

Listing of Amendments to the Drawings

The applicant acknowledges the examiner's objection to the drawings for not including reference signs mentioned in the description: "Storage Devices 12₂ and 12₃" (see Page 2, lines 31-32). The applicant has amended the drawings to include reference signs 12₂ and 12₃ in Figure 1 and submits a new drawing sheet including amendments in red ink for the examiner's approval.

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Remarks/Arguments

The Office Action mailed on February 20, 2007 has been reviewed and carefully considered.

Claims 1-5 and 7-11 have been amended. Claims 1-11 are now pending in this application.

Reconsideration of the above-identified application, as herein amended and in view of the following remarks, is respectfully requested.

The applicant acknowledges the examiner's objection to the drawings under 37 CFR 1.84(p)(5) for not including reference signs mentioned in the description: "Storage Devices 12₂ and 12₃" (see Page 2, lines 31-32). The applicant submits a new drawing sheet for Figure 1 including amendments in red ink. The applicant will submit formal drawings upon approval of the replacement drawing sheet. Accordingly, withdrawal of the objection to the drawings is respectfully requested.

The disclosure stands objected because the disclosure recites "(not shown)" with respect to items that are displayed in the figures. Recitations of "(not shown)" with respect to items that are displayed in the figures in the disclosure have been deleted. Accordingly, withdrawal of the objection to the disclosure is respectfully requested.

Claims 1, 2, 7 and 8 stand objected because the examiner maintains that the phrase "the one storage device" is unclear. Additionally, the examiner objects to claims 1 and 7 because the claims' recitation of "display of information" is unclear. Applicant has

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amended the claims according to the examiner' s suggestions. Thus, withdrawal of the objection to claims 1, 2, 7 and 8 is respectfully requested.

Claims 1 and 7 stand rejected under 35 U.S.C. 112, second paragraph, for failure to particularly point out and distinctly claiming the subjection matter of the invention. Specifically, examiner maintains that the phrases " the identified device" and " the selected menu option" lack a sufficient antecedent basis. Applicant respectfully disagrees with examiner' s assertion with respect to the phrase " the identified device." Original claims 1 and 7 in part (a) of the claims recite " identifying the one storage device." Part (c) of original claims 1 and 7 recite " the identified device." The language of part (c) in original claims 1 and 7 clearly and unambiguously refers to the device identified and recited in part (a).

Notwithstanding the foregoing, applicant has amended claims 1 and 7 to clarify the subject matter of the invention. Claim 1 includes method for managing at least one storage device, comprising, *inter alia*, the steps of: identifying the at least one storage device; establishing a database containing information about the identified at least one storage device; providing to the user a graphical user interface in accordance with the information in the database, the graphical interface displaying at least one menu option for the identified at least one storage device for ~~selection by~~ the user to ~~request-select~~ at least one of (i) display of the information about the identified at least one storage device and (ii) execution of at least one process to control the operation of the at least one storage device; and processing the user-selected menu option "[T]he identified at least one storage device" has antecedent basis in the establishing step. "[T]he user-selected menu option"

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has antecedent basis in the providing step. Accordingly, subsequent recitations of “the identified at least one storage device” and “the user-selected menu option” each have a proper antecedent basis.

Additionally, claim 7 includes an apparatus for managing at least one storage device, comprising, *inter alia*: a database containing information about potential at least one storage devices; a processor coupled to the at least one storage device for (a) identifying the at least one storage device; (b) providing to a user a graphical user interface in accordance with the information in the database, the graphical interface displaying at least one menu option for the-identified at least one storage device for selection by the user to request-select at least one of (i) display of information about the identified at least one storage device and (ii) execution of at least one process to control the operation of the at least one storage device; and (d)-(c) processing the user-selected menu option. Similar to claim 1, “[T]he identified at least one storage device” has antecedent basis in part (a) and “the user-selected menu option” has antecedent basis in part (b). Thus, subsequent recitations of “the identified at least one storage device” and “the user-selected menu option” each have a proper antecedent basis. Thus, subsequent recitations of “the identified at least one storage device” and “the selected menu option” have a proper antecedent basis. Accordingly, withdrawal of the rejections of claims 1 and 7 under 35 U.S.C. 112, second paragraph is respectfully requested.

Claims 1-11 stand rejected under 35 U.S.C. §102(e) as being unpatentable over Baldwin et al. (U.S. Patent No. 7,171,624 B2) (hererinafter “Baldwin”).

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Before addressing the outstanding rejections, applicant will briefly summarize the invention to better assist the Examiner in appreciating the differences between applicant's claimed invention and the art of record. The present principles include a method and apparatus for managing storage devices. One aspect of the present principles is low-level management of storage devices originating from different manufacturers, which are associated with a single host system (10), such as a personal computer or mini-computer (see Applicant's Specification Page 2, lines 32-33 to Page 3, lines 1-3; Page 2, lines 12-13). Operating characteristics of the storage devices are often unique due to their origination from different manufacturers (see Applicant's Specification, Page 3, lines 2-3). Thus, storage devices may be better managed by taking their individual operating characteristics into account (see Applicant's Specification, Page 3, lines 2-3).

According to another aspect of the present principles, the operating characteristics of each device are compiled, stored and displayed to the user. The operating characteristics include at least one of operational rules, commands, or processing routines of each device (see Applicant's Specification, Page 3, lines 17-18). Based upon the display of operating characteristics and other information about the storage devices, the user may configure the internal operation of the storage devices (see Applicant's Specification, Page 5, lines 17-19). Among other things, the user may set each storage device system clock, load vendor specific firmware to individual devices; or start or stop one or more consistency check operations (see Applicant's Specification, Page 5, lines 25-33 to Page 6, lines 1-7).

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Baldwin includes a method and apparatus for managing a storage area network (SAN). The method and apparatus disclosed in Baldwin is primarily concerned with the interconnectivity of hosts and storage devices on the network as well as configuration of access of specific storage devices by different hosts (see, e.g., Baldwin, Column 1, lines 61-67; Column 2 lines 1-6). Baldwin discloses employing a manager process or device in combination with several agent processes or devices that are associated with each host on the network (see Baldwin, Column 2, lines 39-43). The agent processes identify their associated hosts, the interconnectivity of the hosts, and the storage units that are coupled to the hosts via the interconnect (see Baldwin, Column 2, lines 43-47).

The information compiled by the agent processes or devices result in a topological representation of hosts and storage devices on the storage area network, according to which a user may manage the network (see Baldwin Column 4, lines 55-58). Information compiled by the agent processes in Baldwin include vendor information (see Baldwin, Figure 17), the vendor identification number of the storage device (see Baldwin, Figure 17), the capacity of the storage device (see Baldwin, Column 39, lines 18-27), whether the storage device has been added to or removed from the SAN, whether attributes of the device were modified, and whether there was a change in the relationship between the device and hosts (see Baldwin, Column 39, lines 48-52).

Baldwin additionally discloses compiling and employing management information for network devices such as switches and hubs (see Baldwin Column 78, lines 28-35). The management information describes types of particular management methods for the network devices, such as Telnet, URL, Applications, SNMP, as well as other aspects

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associated with network devices (see Baldwin Column 79, lines 58-67 to Column 80, lines 1-26).

Baldwin does not disclose or suggest, however, compilation of operating characteristics of storage devices. As stated above, Baldwin discloses compilation of vendor information, storage capacity, and interconnectivity with various hosts. Baldwin does not disclose or suggest collection of operating rules, commands, or processing routings, which are characteristics of each data storage device. Although Baldwin discloses compilation of management information of network devices, such as switches and hubs, it fails to disclose or suggest operating characteristics of storage devices. As stated above, the primary concern of the method and apparatus in Baldwin is the interconnectivity between hosts and storage devices; Baldwin is not concerned with low-level management of the internal operations of data storage devices.

The present principles, as discussed above, include compilation of operating characteristics of storage devices. Accordingly, the present principles are distinguished from Baldwin because Baldwin does not disclose or suggest at least compilation of operating characteristics of data storage devices.

It should be noted that applicant respectfully disagrees with the examiner's assertion that Baldwin discloses obtaining information that includes at least one of operational rules, commands, and processing routines of storage devices. In support of the assertion, the examiner cites Baldwin, Column 4, lines 33-40, which states "the invention provides a SAN as described above in which the manager maintains policies for handling events pertaining to (i) attributes of at least selected hosts and/or (ii) establishment of

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relationships of at least selected hosts with one or more storage units. A policy engine included within the manager responds to notification of at least a selected event by effecting execution of an action according to the policy maintained therefor.” An event includes information associated with connectivity of storage devices, such as a failure or disconnection of storage devices from the SAN (see Baldwin, Column 4, lines 21-23). The policies referred to in Baldwin are network-rules developed by the inventor to manage problems associated with the network, such as storage device connection failure. The policies are not characteristic of the storage devices themselves. As stated above, the operational rules, commands, and processing routines of storage devices are characteristics of the storage devices and are very often unique to each storage device. Accordingly, Baldwin fails to disclose or suggest compilation of the operating characteristics of the storage devices connected to the SAN.

Claim 1 has been amended to clarify the present principles. Claim 1 includes a method for managing at least one storage device, comprising, *inter alia*, the step of: establishing a database containing information about an identified at least one storage device, wherein the information about the identified at least one storage device includes operating characteristics of the identified at least one storage device (Applicant’s Specification, Page 3, lines 15-17). Thus, the present principles are distinguished from Baldwin, as Baldwin fails to disclose at least compiling operating characteristics of storage devices.

Claim 7 has been similarly amended to clarify the present principles. Claim 7 includes an apparatus for managing at least one storage device, comprising, *inter alia*: a

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database containing information about at least one storage device, wherein the information about the at least one storage device includes operating characteristics of the at least one storage device (Applicant's Specification, Page 3, lines 15-17). As discussed above, the present principles are distinguished from Baldwin because Baldwin fails to disclose at least a database including operating characteristics of storage devices.

Accordingly, for at least the reasons stated above, claims 1 and 7 are believed to be in condition for allowance. Claims 2-6 and 8-11 are believed to be in condition for allowance due at least to their dependencies from claims 1 and 7 respectively.

In view of the foregoing, Applicant respectfully requests that the rejections of the claims set forth in the Office Action of February 20, 2007 be withdrawn, that pending claims 1, 2, 4-8, 10 and 11 be allowed, and that the case proceed to early issuance of Letters Patent in due course.

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It is believed that no additional fees or charges are currently due. However, in the event that any additional fees or charges are required at this time in connection with the application, they may be charged to applicant' s representatives Deposit Account

No.: 07-0832.

Respectfully submitted,
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